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| 10/560,907  | 12/16/2005  | Toshinori Sugihara   | 1035-616                | 2364                   |
| 23117 7590 11/21/2007<br>NIXON & VANDERHYE, PC<br>901 NORTH GLEBE ROAD, 11TH FLOOR<br>ARLINGTON, VA 22203 |             |                      | EXAMINER<br>KIM, JAY C  |                        |
|   |             |                      | ART UNIT<br>2815        | PAPER NUMBER           |
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

Application No.

10/560,907

Applicant(s)

SUGIHARA ET AL.

Examiner

Jay C. Kim

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 20 September 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-34 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-34 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 16 December 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date See Continuation Sheet.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

Continuation of Attachment(s) 3). Information Disclosure Statement(s) (PTO/SB/08), Paper No(s)/Mail Date  
:12/16/05,7/26/06,9/11/06,1/16/07.

### **DETAILED ACTION**

This Office Action is in response to the Application filed December 16, 2005.

#### ***Election/Restrictions***

1. Applicants' election without traverse of Species d in the reply filed on September 20 is acknowledged. Claims 1-34 read on Species d.

#### ***Claim Objections***

2. Claim 14 is objected to because of the following informalities: on line 3, "the blocking layer" should be replaced by "the blocking layers". Appropriate correction is required.

#### ***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claims 1-34 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claims contain subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. In claim 1, Examiner finds it not enabling that the atmosphere "never" influences a region of the active layer, because there is always a probability greater

than 0 that an atom or a molecule in an atmosphere to diffuse into the active layer through a blocking member, and physical parameters of the atmosphere including temperature would influence a region of the active layer. Claims 2-34 depend on claim 1, and therefore claims 2-34 are not enabling.

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1-7, 11, 15-20, 27 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kawasaki et al. (US 2003/0047785) in view of Goodman (US 4,204,217) and further in view of Wager et al. (US 2003/0218222).

Regarding claims 1 and 2, Kawasaki et al. disclose a semiconductor device (Fig. 1) comprising an active layer (5) (line 3 of [0037]), to which elements are added (lines 3-4 of [0038]), and which is made of a semiconductor containing ZnO or  $Mg_xZn_{1-x}O$  (lines 1-3 of [0038]), and a blocking member (4a, 4b, 6, 7 and 9) (lines 3-5 of [0037], [0039], and line 6 of [0050]) for blocking the active layer (5) from an atmosphere such that the atmosphere does not substantially influence a region, in which a movable charge moves, of the active layer (5).

Kawasaki et al. differ from the claimed inventions by not showing that group I elements, group III elements, group IV elements, group V elements, or group VII

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elements are added to the active layer, and that the active layer is made of polycrystalline ZnO or  $\text{Mg}_x\text{Zn}_{1-x}\text{O}$ , amorphous ZnO or amorphous  $\text{Mg}_x\text{Zn}_{1-x}\text{O}$ , or either mixture of the polycrystalline ZnO and the amorphous ZnO or mixture of the polycrystalline  $\text{Mg}_x\text{Zn}_{1-x}\text{O}$  and the amorphous  $\text{Mg}_x\text{Zn}_{1-x}\text{O}$  (claim 1), and each of the elements corresponds to nitrogen, phosphorus, arsenic, or stibium, or the elements correspond to not less than two of nitrogen, phosphorus, arsenic, and stibium (claim 2).

Goodman discloses a semiconductor device (Fig. 1) comprising an active layer (16) made of polycrystalline or amorphous ZnO (col. 2, lines 7-9).

Since both Kawasaki et al. and Goodman teach a semiconductor device, it would have been obvious to the one of ordinary skill in the art at the time the invention was made that the active layer disclosed by Kawasaki et al. comprises polycrystalline or amorphous ZnO, because a polycrystalline or amorphous semiconductor material is commonly used in manufacturing a thin film transistor.

Further regarding claims 1 and 2, Kawasaki et al. in view of Goodman differ from the claimed inventions by not showing that group I elements, group III elements, group IV elements, group V elements, or group VII elements are added to the active layer (claim 1), and each of the elements corresponds to nitrogen, phosphorus, arsenic, or stibium, or the elements correspond to not less than two of nitrogen, phosphorus, arsenic, and stibium (claim 2).

Wager et al. disclose a semiconductor device (Figs. 9) comprising an active layer (41) made of ZnO (lines 3-4 of [0073]) to which dopants such as N, P and As and mixtures thereof can be added (lines 20-23 of [0038]).

Since both Kawasaki et al. and Wager et al. teach a semiconductor device, it would have been obvious to the one of ordinary skill in the art at the time the invention was made to dope the active layer disclosed by Kawasaki et al. in view of Goodman with the dopants disclosed by Wager et al., because doping a ZnO semiconductor layer with N, P and As is well-known and should be controlled to achieve desired device characteristics in manufacturing a semiconductor device comprising a ZnO active layer.

Regarding claims 3-5, Kawasaki et al. in view of Goodman and further in view of Wager et al. differ from the claimed inventions by not showing that the elements corresponds to (i) hydrogen and (ii) nitrogen, phosphorus, arsenic, stibium, or not less than two of nitrogen, phosphorus, arsenic, and stibium (claim 3), and that the active layer is formed under an atmosphere containing (i) one or more of nitrogen, dinitrogen monoxide, nitrogen monoxide, and nitrogen dioxide, and (ii) one or more of water vapor, hydrogen peroxide, and ammonia (claim 4), and not showing a method comprising the step of forming the active layer under an atmosphere containing (i) one or more of nitrogen, dinitrogen monoxide, nitrogen monoxide, and nitrogen dioxide, and (ii) one or more of water vapor, hydrogen peroxide, and ammonia (claim 5).

Wager et al. further disclose forming a ZnO semiconductor layer in an atmosphere that includes at least one sputter gas including Ar and Ne, and at least one film-modifying gas including oxidative gases including O<sub>2</sub> and N<sub>2</sub>O, and dopant gases including N<sub>2</sub> and NH<sub>3</sub> (lines 1-4 and 13-16 of [0041]), and therefore the atmosphere can include a mixture of dinitrogen monoxide (N<sub>2</sub>O) and ammonia

(NH<sub>3</sub>), which would inherently add hydrogen and nitrogen to the ZnO semiconductor layer when N<sub>2</sub>O and NH<sub>3</sub> molecules break up.

Since both Kawasaki et al. and Wager et al. teach a semiconductor device, it would have been obvious to the one of ordinary skill in the art at the time the invention was made to form the ZnO semiconductor layer disclosed by Kawasaki et al. in view of Goodman and further in view of Wager et al. under an atmosphere containing N<sub>2</sub>O and NH<sub>3</sub>, because an oxidative gas such as N<sub>2</sub>O is commonly used to reduce oxygen vacancy concentration in a ZnO semiconductor layer, and NH<sub>3</sub> gas is commonly used to dope a ZnO semiconductor layer.

Regarding claim 6, Kawasaki et al. further disclose for the semiconductor device as set forth in claim 1 that the blocking member (4a, 4b, 6, 7 and 9) is made up of different blocking layers (4a, 4b, 6, 7 and 9).

Regarding claim 7, Kawasaki et al. further disclose that a blocking layer (4b) is made of SiO<sub>2</sub>, Al<sub>2</sub>O<sub>3</sub>, MgO, Ta<sub>2</sub>O<sub>5</sub>, TiO<sub>2</sub>, ZrO<sub>2</sub>, CeO<sub>2</sub>, K<sub>2</sub>O, Li<sub>2</sub>O, Na<sub>2</sub>O, Rb<sub>2</sub>O, In<sub>2</sub>O<sub>3</sub>, La<sub>2</sub>O<sub>3</sub>, Sc<sub>2</sub>O<sub>3</sub>, Y<sub>2</sub>O<sub>3</sub>, or a solid solution containing at least two of them (lines 5-9 of [0041]).

Regarding claim 11, Kawasaki et al. further comprise for the semiconductor device as set forth in claim 6 a gate electrode (3) (line 4 of [0037]) for controlling move of a movable electric charge in the active layer (5), a gate insulating layer (4), which serves as a block layer, for insulating the active layer (5) from the gate electrode (3), a source electrode (6) connected to the active layer (5), and a drain electrode (7) connected to the active layer (5), wherein a blocking layer (4b) is made



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of  $\text{SiO}_2$ ,  $\text{Al}_2\text{O}_3$ ,  $\text{MgO}$ ,  $\text{Ta}_2\text{O}_5$ ,  $\text{TiO}_2$ ,  $\text{ZrO}_2$ ,  $\text{CeO}_2$ ,  $\text{K}_2\text{O}$ ,  $\text{Li}_2\text{O}$ ,  $\text{Na}_2\text{O}$ ,  $\text{Rb}_2\text{O}$ ,  $\text{In}_2\text{O}_3$ ,  $\text{La}_2\text{O}_3$ ,  $\text{Sc}_2\text{O}_3$ ,  $\text{Y}_2\text{O}_3$ , or a solid solution containing at least two of them (lines 5-9 of [0041]).

Regarding claim 15, Kawasaki et al. further disclose an electronic device (Figs. 8 and 9) comprising, as a switching element (T in Fig. 9), a thin film transistor (Fig. 1) ([0093] and lines 1-3 of [0096]).

Regarding claim 16, Kawasaki et al. further disclose that switching element (T) is connected to a picture element electrode (8 in Fig. 1) (line 8 of [0037]) such that an image signal is written in or read out from the picture element electrode (8).

Regarding claim 17, Kawasaki et al. further disclose an electronic device (Figs. 8 and 9) comprising, as a switching element (T in Fig. 9), a thin film transistor (Fig. 1) ([0093] and lines 1-3 of [0096]).

Regarding claim 18, Kawasaki et al. further disclose that the switching element (T) is connected to a picture element electrode (8 in Fig. 1) (line 8 of [0037]) such that an image signal is written in or read out from the picture element electrode (8).

Regarding claim 19, Kawasaki et al. further disclose an electronic device (Figs. 8 and 9) comprising, as a switching element (T in Fig. 9), a thin film transistor (Fig. 1) ([0093] and lines 1-3 of [0096]).

Regarding claim 20, Kawasaki et al. further disclose that the switching element (T) is connected to a picture element electrode (8 in Fig. 1) (line 8 of [0037]) such that an image signal is written in or read out from the picture element electrode (8).

Regarding claim 27, Kawasaki et al. further disclose an electronic device (Figs. 8 and 9) comprising, as a switching element (T in Fig. 9), a thin film transistor (Fig. 1) ([0093] and lines 1-3 of [0096]).

Regarding claim 28, Kawasaki et al. further disclose that the switching element (T) is connected to a picture element electrode (8 in Fig. 1) (line 8 of [0037]) such that an image signal is written in or read out from the picture element electrode (8).

7. Claims 8, 12, 21, 22, 29 and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kawasaki et al. (US 2003/0047785) in view of Goodman (US 4,204,217) and further in view of Wager et al. (US 2003/0218222), and then further in view of Ogawa (US 2002/0056838). The teachings of Kawasaki et al. in view of Goodman and further in view of Wager et al. are discussed above.

Regarding claim 8, Kawasaki et al. further disclose for the semiconductor device as set forth in claim 7 that a blocking layer (9) ([0050]) constituting the blocking layers (4a, 4b, 6, 7 and 9) is made of silicon nitride, and the blocking layer (9) is so provided as to meet the active layer (5) separately from (i) each of two electrodes (6 and 7) serving as blocking layers and connected to the active layer (5), and (ii) an insulating layer (4), which serves as a blocking layer and meets the active layer (5), for insulating the active layer (5) from a control electrode (3) (line 4 of [0037]) for controlling move of a movable electric charge in the active layer (5).

Kawasaki et al. in view of Goodman and further in view of Wager et al. differ from the claimed invention by not showing the blocking layer is made of  $\text{SiO}_2$ ,  $\text{Al}_2\text{O}_3$ ,

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MgO, Ta<sub>2</sub>O<sub>5</sub>, TiO<sub>2</sub>, ZrO<sub>2</sub>, CeO<sub>2</sub>, K<sub>2</sub>O, Li<sub>2</sub>O, Na<sub>2</sub>O, Rb<sub>2</sub>O, In<sub>2</sub>O<sub>3</sub>, La<sub>2</sub>O<sub>3</sub>, Sc<sub>2</sub>O<sub>3</sub>, Y<sub>2</sub>O<sub>3</sub>, ..., or a solid solution containing at least two of them.

Ogawa discloses a semiconductor device (Fig. 9) comprising a blocking layer (13) (line 1 of [0181]) for a ZnO semiconductor layer (23) (lines 5-6 of [0177]), wherein the blocking layer (13) can be made of SiO<sub>2</sub> (lines 8-11 of [0077]).

Since both Kawasaki et al. and Ogawa teach a semiconductor device, it would have been obvious to the one of ordinary skill in the art at the time the invention was made to replace the silicon nitride blocking layer disclosed by Kawasaki et al. in view of Goodman and further in view of Wager et al. with SiO<sub>2</sub> disclosed by Ogawa, because SiO<sub>2</sub> is commonly used as an alternative to silicon nitride in manufacturing a semiconductor device.

Regarding claim 12, Kawasaki et al. further disclose for the semiconductor device as set forth in claim 11 that a blocking layer (9) ([0050]) constituting the blocking layers (4a, 4b, 6, 7 and 9) is made of silicon nitride, and the blocking layer (9) is so provided as to meet the active layer (5) separately from the source electrode (6), the drain electrode (7), and the gate insulating layer (4), each of which serves as a blocking layer.

Kawasaki et al. in view of Goodman and further in view of Wager et al. differ from the claimed invention by not showing the blocking layer is made of SiO<sub>2</sub>, Al<sub>2</sub>O<sub>3</sub>, MgO, Ta<sub>2</sub>O<sub>5</sub>, TiO<sub>2</sub>, ZrO<sub>2</sub>, CeO<sub>2</sub>, K<sub>2</sub>O, Li<sub>2</sub>O, Na<sub>2</sub>O, Rb<sub>2</sub>O, In<sub>2</sub>O<sub>3</sub>, La<sub>2</sub>O<sub>3</sub>, Sc<sub>2</sub>O<sub>3</sub>, Y<sub>2</sub>O<sub>3</sub>, ..., or a solid solution containing at least two of them.

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Ogawa discloses a semiconductor device (Fig. 9) comprising a blocking layer (13) (line 1 of [0181]) for a ZnO semiconductor layer (23) (lines 5-6 of [0177]), wherein the blocking layer (13) can be made of SiO<sub>2</sub> (lines 8-11 of [0077]).

Since both Kawasaki et al. and Ogawa teach a semiconductor device, it would have been obvious to the one of ordinary skill in the art at the time the invention was made to replace the silicon nitride blocking layer disclosed by Kawasaki et al. in view of Goodman and further in view of Wager et al. with SiO<sub>2</sub> disclosed by Ogawa, because SiO<sub>2</sub> is commonly used as an alternative to silicon nitride in manufacturing a semiconductor device.

Regarding claim 21, Kawasaki et al. further disclose an electronic device (Figs. 8 and 9) comprising, as a switching element (T in Fig. 9), a thin film transistor (Fig. 1) ([0093] and lines 1-3 of [0096]).

Regarding claim 22, Kawasaki et al. further disclose that the switching element (T) is connected to a picture element electrode (8 in Fig. 1) (line 8 of [0037]) such that an image signal is written in or read out from the picture element electrode (8).

Regarding claim 29, Kawasaki et al. further disclose an electronic device (Figs. 8 and 9) comprising, as a switching element (T in Fig. 9), a thin film transistor (Fig. 1) ([0093] and lines 1-3 of [0096]).

Regarding claim 30, Kawasaki et al. further disclose that the switching element (T) is connected to a picture element electrode (8 in Fig. 1) (line 8 of [0037]) such that an image signal is written in or read out from the picture element electrode

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(8).

8. Claims 9, 10, 13, 14, 23-26 and 31-34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kawasaki et al. (US 2003/0047785) in view of Goodman (US 4,204,217) and further in view of Wager et al. (US 2003/0218222), and then further in view of Kaneko et al. (US 5,166,816). The teachings of Kawasaki et al. in view of Goodman and further in view of Wager et al. are discussed above.

Regarding claims 9 and 10, Kawasaki et al. further disclose for the semiconductor device as set forth in claim 6 that a blocking layer (9) ([0050]) is made of silicon nitride, and the blocking layer (9) is so provided as to meet the active layer (5) separately from (i) each of two electrodes (6 and 7) serving as blocking layers and connected to the active layer (5), and (ii) an insulating layer (4), which serves as a blocking layer and meets the active layer (5), for insulating the active layer (5) from a control electrode (3) (line 4 of [0037]) for controlling move of a movable electric charge in the active layer (5).

Kawasaki et al. in view of Goodman and further in view of Wager et al. differ from the claimed inventions by not showing that the blocking layer is made of resin.

Kaneko et al. disclose a semiconductor device (Fig. 6) wherein a blocking layer (61) is made of resin (col. 4, line 57), and the blocking layer (61) is so provided as to meet the active layer (54) (col. 4, lines 21-22) separately from (i) each of two electrodes (56 and 57) (col. 4, lines 15-16) serving as blocking layers and connected to the active layer (54), and (ii) an insulating layer (53) (col. 4, line 21), which serves as a blocking layer and meets the active layer (54), for insulating the active layer

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(54) from a control electrode (52) (col. 4, lines 20-21) for controlling move of a movable electric charge in the active layer (54).

Since both Kawasaki et al. and Kaneko et al. teach a semiconductor device, it would have been obvious to the one of ordinary skill in the art at the time the invention was made to replace the blocking layer disclosed by Kawasaki et al. in view of Goodman and further in view of Wager et al. with the polyimide resin disclosed by Kaneko et al., because a polyimide resin is a well-known material for forming an interlayer insulating film in manufacturing a thin film transistor.

Regarding claims 13 and 14, Kawasaki et al. further comprise for the semiconductor device as set forth in claim 6 a gate electrode (3) (line 4 of [0037]) for controlling move of a movable electric charge in the active layer (5), a gate insulating layer (4), which serves as a block layer, for insulating the active layer (5) from the gate electrode (3), a source electrode (6) connected to the active layer (5), a drain electrode (7) connected to the active layer (5), wherein a blocking layer (9) is made of silicon nitride ([0050]), and the blocking layer (9) is so provided as to meet the active layer (5) separately from the source electrode (6), the drain electrode (7), and the gate insulating layer (4), each of which serves as a blocking layer.

Kawasaki et al. in view of Goodman and further in view of Wager et al. differ from the claimed invention by not showing that the blocking layer is made of a resin.

Kaneko et al. disclose a semiconductor device (Fig. 6) comprising a gate electrode (52) (col. 4, lines 20-21) for controlling move of a movable electric charge in the active layer (54) (col. 4, lines 21-22), a gate insulating layer (53) (col. 4, line 21), which serves as a block layer, for insulating the active layer (54) from the gate

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electrode (52), a source electrode (57) (col. 4, lines 15-16) connected to the active layer (54), a drain electrode (56) (col. 4, line 16) connected to the active layer (54), wherein a blocking layer (61) is made of a resin (col. 4, line 57), and the blocking layer (61) is so provided as to meet the active layer (54) separately from the source electrode (57), the drain electrode (56), and the gate insulating layer (53), each of which serves as a blocking layer.

Since both Kawasaki et al. and Kaneko et al. teach a semiconductor device, it would have been obvious to the one of ordinary skill in the art at the time the invention was made to replace the silicon nitride blocking layer disclosed by Kawasaki et al. in view of Goodman and further in view of Wager et al. with the polyimide resin disclosed by Kaneko et al., because a polyimide resin is a well-known material for forming an interlayer insulating film in manufacturing a thin film transistor.

Regarding claim 23, Kawasaki et al. further disclose an electronic device (Figs. 8 and 9) comprising, as a switching element (T in Fig. 9), a thin film transistor (Fig. 1) ([0093] and lines 1-3 of [0096]).

Regarding claim 24, Kawasaki et al. further disclose that the switching element (T) is connected to a picture element electrode (8 in Fig. 1) (line 8 of [0037]) such that an image signal is written in or read out from the picture element electrode (8).

Regarding claim 25, Kawasaki et al. further disclose an electronic device (Figs. 8 and 9) comprising, as a switching element (T in Fig. 9), a thin film transistor (Fig. 1) ([0093] and lines 1-3 of [0096]).

Regarding claim 26, Kawasaki et al. further disclose that the switching element (T) is connected to a picture element electrode (8 in Fig. 1) (line 8 of [0037]) such that an image signal is written in or read out from the picture element electrode (8).

Regarding claim 31, Kawasaki et al. further disclose an electronic device (Figs. 8 and 9) comprising, as a switching element (T in Fig. 9), a thin film transistor (Fig. 1) ([0093] and lines 1-3 of [0096]).

Regarding claim 32, Kawasaki et al. further disclose that the switching element (T) is connected to a picture element electrode (8 in Fig. 1) (line 8 of [0037]) such that an image signal is written in or read out from the picture element electrode (8).

Regarding claim 33, Kawasaki et al. further disclose an electronic device (Figs. 8 and 9) comprising, as a switching element (T in Fig. 9), a thin film transistor (Fig. 1) ([0093] and lines 1-3 of [0096]).

Regarding claim 34, Kawasaki et al. further disclose that the switching element (T) is connected to a picture element electrode (8 in Fig. 1) (line 8 of [0037]) such that an image signal is written in or read out from the picture element electrode (8).

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jay C. Kim whose telephone number is (571) 270-1620. The examiner can normally be reached on 7:30 AM - 5:00 PM EST.




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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kenneth Parker can be reached on (571) 272-2298. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

J.K.

November 19, 2007

  
Matthew C. Landers  
Primary Examiner